

WHAT IS CLAIMED IS:

✓. A method for label edge routing in a wireless network, comprising:

5 providing a flow between an application of a mobile unit and a serving node, the flow comprising an outbound flow from the application;

receiving at the mobile unit the outbound flow; and

classifying at the mobile unit the flow.

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2. The method of Claim 1, the outbound flow comprising a plurality of outbound packets, the method further comprising:

15 adding at the mobile unit an outbound label stack to each of the outbound packets, the outbound label stack based on the classification of the flow and comprising at least one label; and

forwarding the outbound packets to the serving node.

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3. The method of Claim 2, further comprising:

storing at the mobile unit flow labels for a plurality of applications of the mobile unit; and

25 classifying the flow comprising determining flow characteristics for the flow and a flow label for the flow, the flow label comprising one of the stored flow labels.

4. The method of Claim 3, the flow further comprising an inbound flow from the serving node, the method further comprising:

5 storing at the mobile unit the determined flow characteristics for the flow and the determined flow label for the flow;

10 receiving at the mobile unit the inbound flow, the inbound flow comprising a plurality of inbound packets, the inbound packets each comprising an inbound label stack comprising at least one label; and

retrieving at the mobile unit the stored flow characteristics for the flow and the stored flow label for the flow.

15 5. The method of Claim 4, further comprising:

removing at the mobile unit the inbound label stack from each of the inbound packets; and

forwarding the inbound packets to the application.

6. The method of Claim 1, further comprising:
 - generating at the mobile unit a label request for the application;
 - receiving at the mobile unit a label response based on the label request, the label response comprising at least one label;
 - determining at the mobile unit flow characteristics and a flow label for the flow, the flow label comprising one of the labels in the label response;
 - 10 and
 - storing at the mobile unit the flow characteristics and the flow label for the flow.
7. The method of Claim 6, the label response based on a label allocation performed at a label server, the label server coupled to the network.
8. The method of Claim 6, generating a label request comprising generating an agent solicitation message, the agent solicitation message comprising a vendor-specific extension, the vendor-specific extension comprising the label request.
9. The method of Claim 6, receiving a label response comprising receiving an agent advertisement message, the agent advertisement message comprising a vendor-specific extension, the vendor-specific extension comprising the label response.

10. The method of Claim 6, further comprising:
determining at the mobile unit whether the mobile
unit supports label switching; and
5 determining at the mobile unit whether the
serving node supports label switching.

11. A system for label edge routing in a wireless network, comprising:

means for providing a flow between an application of a mobile unit and a serving node, the flow comprising an
5 outbound flow from the application;

means for receiving at the mobile unit the outbound flow; and

means for classifying at the mobile unit the flow.

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12. The system of Claim 11, the outbound flow comprising a plurality of outbound packets, the system further comprising:

15 means for adding at the mobile unit an outbound label stack to each of the outbound packets, the outbound label stack based on the classification of the flow and comprising at least one label; and

means for forwarding the outbound packets to the serving node.

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13. The system of Claim 12, further comprising:

means for storing at the mobile unit flow labels for a plurality of applications of the mobile unit; and

25 means for classifying the flow comprising determining flow characteristics for the flow and a flow label for the flow, the flow label comprising one of the stored flow labels.

14. The system of Claim 13, the flow further comprising an inbound flow from the serving node, the system further comprising:

means for storing at the mobile unit the 5 determined flow characteristics for the flow and the determined flow label for the flow;

means for receiving at the mobile unit the inbound flow, the inbound flow comprising a plurality of inbound packets, the inbound packets each comprising an 10 inbound label stack comprising at least one label; and

means for retrieving at the mobile unit the stored flow characteristics for the flow and the stored flow label for the flow.

15 15. The system of Claim 14, further comprising:

means for removing at the mobile unit the inbound label stack from each of the inbound packets; and

means for forwarding the inbound packets to the application.

16. The system of Claim 11, further comprising:
means for generating at the mobile unit a label
request for the application;
means for receiving at the mobile unit a label
5 response based on the label request, the label response
comprising at least one label;
means for determining at the mobile unit flow
characteristics and a flow label for the flow, the flow
label comprising one of the labels in the label response;
10 and
means for storing at the mobile unit the flow
characteristics and the flow label for the flow.

17. The system of Claim 16, the label response based
15 on a label allocation performed at a label server, the
label server coupled to the network.

18. The system of Claim 16, the means for generating
a label request comprising means for generating an agent
20 solicitation message, the agent solicitation message
comprising a vendor-specific extension, the vendor-specific
extension comprising the label request.

19. The system of Claim 16, the means for receiving
25 a label response comprising means for receiving an agent
advertisement message, the agent advertisement message
comprising a vendor-specific extension, the vendor-specific
extension comprising the label response.

20. The system of Claim 16, further comprising:
means for determining at the mobile unit whether
the mobile unit supports label switching; and
5 means for determining at the mobile unit whether
the serving node supports label switching.

21. A system for label edge routing in a wireless network, comprising:

a computer-processable medium; and

logic stored on the computer-processable medium,

5 the logic operable to provide a flow between an application of a mobile unit and a serving node, the flow comprising an outbound flow from the application, to receive at the mobile unit the outbound flow, and to classify the flow at the mobile unit.

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22. The system of Claim 21, the outbound flow comprising a plurality of outbound packets, the logic further operable to add at the mobile unit an outbound label stack to each of the outbound packets, the outbound 15 label stack based on the classification of the flow and comprising at least one label, and to forward the outbound packets to the serving node.

23. The system of Claim 22, the logic further 20 operable to store at the mobile unit flow labels for a plurality of applications of the mobile unit and to classify the flow by determining flow characteristics for the flow and a flow label for the flow, the flow label comprising one of the stored flow labels.

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24. The system of Claim 23, the flow further comprising an inbound flow from the serving node, the logic further operable to store at the mobile unit the determined flow characteristics for the flow and the determined flow 5 label for the flow, to receive at the mobile unit the inbound flow, the inbound flow comprising a plurality of inbound packets, the inbound packets each comprising an inbound label stack comprising at least one label, and to retrieve at the mobile unit the stored flow characteristics 10 for the flow and the stored flow label for the flow.

25. The system of Claim 24, the logic further operable to remove at the mobile unit the inbound label stack from each of the inbound packets and to forward the 15 inbound packets to the application.

26. The system of Claim 21, the logic further operable to generate at the mobile unit a label request for the application, to receive at the mobile unit a label 20 response based on the label request, the label response comprising at least one label, to determine at the mobile unit flow characteristics and a flow label for the flow, the flow label comprising one of the labels in the label response, and to store at the mobile unit the flow 25 characteristics and the flow label for the flow.

27. The system of Claim 26, the label response based on a label allocation performed at a label server, the label server coupled to the network.

28. The system of Claim 26, the logic further operable to generate a label request by generating an agent solicitation message, the agent solicitation message 5 comprising a vendor-specific extension, the vendor-specific extension comprising the label request.

29. The system of Claim 26, the logic further operable to receive a label response by receiving an agent 10 advertisement message, the agent advertisement message comprising a vendor-specific extension, the vendor-specific extension comprising the label response.

30. The system of Claim 26, the logic further 15 operable to determine at the mobile unit whether the mobile unit supports label switching and to determine at the mobile unit whether the serving node supports label switching.

31. A mobile unit operable to provide label edge routing in a wireless network, comprising:

5 a service access manager operable to receive a flow between an application of the mobile unit and a serving node, the flow comprising an outbound flow from the application and an inbound flow from the serving node;

a flow classifier operable to classify the flow; and

10 a forwarding information base operable to store flow labels for the flow classifier.

32. The mobile unit of Claim 31, the outbound flow comprising a plurality of outbound packets, the flow classifier further operable to add an outbound label stack to each of the outbound packets, the outbound label stack based on the classification of the flow and comprising at least one label, and to forward the outbound packets to the serving node.

20 33. The mobile unit of Claim 32, the flow classifier further operable to classify the flow by determining flow characteristics for the flow and a flow label for the flow, the flow label comprising one of the flow labels stored in the forwarding information base.

34. The mobile unit of Claim 33, the forwarding information base further operable to store the determined flow characteristics for the flow and the determined flow label for the flow, the inbound flow comprising a plurality 5 of inbound packets, the inbound packets each comprising an inbound label stack comprising at least one label, and the flow classifier further operable to retrieve the stored flow characteristics for the flow and the stored flow label for the flow from the forwarding information base.

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35. The mobile unit of Claim 34, the flow classifier further operable to remove the inbound label stack from each of the inbound packets and to forward the inbound packets to the application.

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36. The mobile unit of Claim 31, the flow classifier further operable to generate a label request for the application, to receive a label response based on the label request, the label response comprising at least one label, 20 to determine flow characteristics and a flow label for the flow, the flow label comprising one of the labels in the label response, and the forwarding information base further operable to store the flow characteristics and the flow label for the flow.

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37. The mobile unit of Claim 36, the label response based on a label allocation performed at a label server, the label server coupled to the network.

38. The mobile unit of Claim 36, the flow classifier further operable to generate a label request by generating an agent solicitation message, the agent solicitation 5 message comprising a vendor-specific extension, the vendor-specific extension comprising the label request.

39. The mobile unit of Claim 36, the flow classifier further operable to receive a label response by receiving 10 an agent advertisement message, the agent advertisement message comprising a vendor-specific extension, the vendor-specific extension comprising the label response.

40. The mobile unit of Claim 36, the service access 15 manager further operable to determine whether the mobile unit supports label switching and to determine whether the serving node supports label switching.

41. A method for label edge routing in a wireless network, comprising:

receiving at the serving node an outbound flow from a mobile unit, the outbound flow comprising a plurality of outbound packets, each of the outbound packets comprising an outbound label stack comprising at least one label, the outbound label stack added to the outbound packets by the mobile unit; and

10 forwarding the outbound packets to the network based on the outbound label stacks.

42. The method of Claim 41, further comprising performing at the serving node a label swap for the outbound packets prior to forwarding the outbound packets 15 to the network.

43. The method of Claim 42, further comprising:

removing the outbound label stack from the outbound packets at the network; and

20 forwarding the outbound packets to a specified destination.

44. The method of Claim 41, further comprising:

receiving at the network inbound packets for the 25 application;

adding an inbound label stack comprising at least one label to each of the inbound packets at the network; and

30 forwarding the inbound packets from the network to the serving node.

45. The method of Claim 44, further comprising:
performing at the serving node a label swap for
the inbound packets; and
forwarding the inbound packets from the serving
5 node to the mobile unit.

46. A system for label edge routing in a wireless network, comprising:

means for receiving at the serving node an outbound flow from a mobile unit, the outbound flow comprising a plurality of outbound packets, each of the outbound packets comprising an outbound label stack comprising at least one label, the outbound label stack added to the outbound packets by the mobile unit; and

means for forwarding the outbound packets to the network based on the outbound label stacks.

47. The system of Claim 46, further comprising means for performing at the serving node a label swap for the outbound packets prior to forwarding the outbound packets to the network.

48. The system of Claim 47, further comprising:

means for removing the outbound label stack from the outbound packets at the network; and

means for forwarding the outbound packets to a specified destination.

49. The system of Claim 46, further comprising:

means for receiving at the network inbound packets for the application;

means for adding an inbound label stack comprising at least one label to each of the inbound packets at the network; and

means for forwarding the inbound packets from the network to the serving node.

50. The system of Claim 49, further comprising:
means for performing at the serving node a label
swap for the inbound packets; and
means for forwarding the inbound packets from the
5 serving node to the mobile unit.

51. A system for label edge routing in a wireless network, comprising:

a computer-processable medium; and

logic stored on the computer-processable medium,

5 the logic operable to receive at the serving node an outbound flow from a mobile unit, the outbound flow comprising a plurality of outbound packets, each of the outbound packets comprising an outbound label stack comprising at least one label, the outbound label stack added to the outbound packets by the mobile unit, and to forward the outbound packets to the network based on the 10 outbound label stacks.

52. The system of Claim 51, the logic further 15 operable to perform at the serving node a label swap for the outbound packets prior to forwarding the outbound packets to the network.

53. The system of Claim 52, the logic further 20 operable to remove the outbound label stack from the outbound packets at the network and to forward the outbound packets to a specified destination.

54. The system of Claim 51, the logic further 25 operable to receive at the network inbound packets for the application, to add an inbound label stack comprising at least one label to each of the inbound packets at the network, and to forward the inbound packets from the network to the serving node.

55. The system of Claim 54, the logic further operable to perform at the serving node a label swap for the inbound packets and to forward the inbound packets from the serving node to the mobile unit.